WHAT IS CLAIMED IS:

1. In a communication system having a sending station for sending data upon a channel susceptible to distortion, the sending station having a first location from which the data is sent and at least a second location from which the data is sent, an improvement of apparatus for space-time encoding the data at a selected coding rate, the selected coding rate a selected one of a first coding rate and at least a second coding rate, said apparatus comprising:

a space-time encoder coupled to receive indications of the selected coding rate and to receive the data to be sent by the sending station, said space-time encoder for encoding the data to form separate encoded data sequences, a separate data sequence applied to each of the first location and the at least the second location, the separate data sequences having separate permutations of the data.

2. The apparatus of claim 1 wherein the selected coding rate to which said space-time encoder is coupled to receive indications thereof comprises a fractional coding rate.

3. The apparatus of claim 1 wherein the sending station is operable to effectuate a first communication service at a first rate and to effectuate at least a second communication service at least at a second rate and wherein the indications of the selected coding rate are of values responsive to which of the first and at least second communication services are to be effectuated.

4. The apparatus of claim 1 wherein the communication system comprises a radio communication system, wherein the channel is defined upon a radio link susceptible to fading, and wherein the first location and the at least the second location to which the separate encoded data sequences formed by said space-time encoder are applied comprise a first antenna transducer and at least a second antenna transducer.

5. The apparatus of claim 1 wherein the data sent by the sending station is sent in successive bursts, the data forming a first burst portion and at least a second burst portion, each of the first and at least second burst portions comprise of code symbols, and wherein the separate data sequences applied to the first and at least second locations exhibit separate burst portion permutations.

6. The apparatus of claim 5 wherein at least one of the burst portions applied to the first and at least second locations exhibit separate permutations of the code symbols of which the at least one of the burst portions is formed.

7. The apparatus of claim 5 wherein each of the burst portions formed by said space-time encoder comprise trellis-encoded burst portions encoded pursuant to a trellis-encoding technique.

8. The apparatus of claim 5 wherein each burst portion formed of the data is represented by an index l, wherein the at least the second location from which the data is sent from the sending station further comprises n locations, and wherein the index l is defined by: $l=\mathrm{mod}(l-1, n)+1$.

9. The apparatus of claim 8 wherein said space-time encoder forms an eight-state space-time code and wherein the data applied to said space-time encoder is encoded pursuant to the eight-state space-time code.

10. In the communication system of claim 1 further comprising a receiving station for receiving the data communicated upon the channel, subsequent to encoding thereof by said space-time encoder, a further improvement of apparatus for decoding the data once received at the receiving station, said apparatus comprising:

a space-time decoder coupled to receive indications of the data communicated upon the channel and received at the receiving station, said space-time decoder for decoding the indications to form a decoded representation of the data.

11. The apparatus of claim 10 wherein said space-time decoder performs cumulative metric decoding operations upon the indications of the data applied thereto.

12. The apparatus of claim 11 wherein the cumulative metric decoding operations performed upon the indications of the data utilized a permutation matrix.

13. The apparatus of claim 10 wherein the separate data sequences formed by said space-time encoder and communicated upon the channel to the receiving station include every permutation of the data.

14. The apparatus of claim 13 wherein distortion introduced upon the data during communication upon the channel affects the separate data sequences in a symmetrical manner.

15. In a method for communicating a communication system having a sending station for sending data upon a channel susceptible to distortion, the sending station having a first location from which the data is sent and at least a second location from which the data is sent, an improvement of a method for space-time encoding the data at a selected coding rate, the selected coding rate a selected one of a first coding rate and at least a second coding rate, said method comprising:

selecting the coding rate at which the data is to be encoded;

encoding the data to form separate encoded data sequences; and

applying a separate data sequence to each of the first location and the at least the second location, the separate data sequences having separate permutations of the data.

16. The method of claim 15 wherein the coding rate selected during said operation of selecting comprises a fractional coding rate.

17. The method of claim 15 wherein the communication system comprises a radio communication system, wherein the channel is defined upon a radio link susceptible to fading, wherein the first location comprises a first antenna transducer and at least a second antenna transducer, and wherein said operation of applying comprises applying a separate data sequence to each of the first antenna transducer and the at least the second antenna transducer.

18. The method of claim 15 wherein the data sent by the sending station is sent in successive bursts, the data forming first burst portion and at least a second burst portion, and wherein the separate data sequence applied during said operation of applying the separate data sequence to each of the first and at least second locations, respectively, comprises data sequences having separate permutations of the data.

19. The method of claim 18 wherein each of the first and at least second burst portions are comprised of code symbols and wherein at least one of the burst portions applied to the first and at least second locations during said operation of applying exhibits separate permutations of the code symbols of which the at least one of the burst portions is formed.

20. In the method of communicating in the communication system of claim 15, the communication system further for receiving the data communicated upon the channel, a further improvement for the receiving station of:

detecting at the receiving station the data communicated by the sending station upon the channel; and

decoding indications of the data detected during said operation of detecting to form a decoded representation of the data.